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SUPPORT MEMBER OF A BEAM FOR A TRAVELING GANTRY CRANE
[ORGANE SUPPORT D'UNE POUTRE POUR UN PORTIQUE MOBILE]

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The present invention concerns a support member of a beam for a traveling gantry crane that includes at least one pair of support members joined transversely by a beam, the support member being made of a structure that includes a vertical sleeve in which a rod slides that allows height adjustment of the beam.

Generally such a traveling gantry crane is made of two pairs of support members and therefore includes two beams arranged in parallel and each one supporting a pulley block.

One such application of such a traveling gantry crane consists, for example, in positioning railway track cross pieces.

In such an application the two pulley blocks support a lifting beam comprised of a rectangular frame equipped on two of its opposite sides with hooks to support the cross pieces that are thus supported by the assembly, parallel to the beams. The lifting beam includes, for example, six pairs of hooks that allow one to position six cross pieces at once. The support members of such a gantry crane include wheels that allow the displacement of the gantry crane on a temporary track, two tubes of steel for example placed on the floor on both sides of the cross pieces and precisely adjusted. Then one advances the gantry crane as the cross pieces are positioned.

¹ Numbers in the margin indicate pagination in the foreign text.

However, the space located on both sides of the cross pieces is not always free for the positioning, with constant separation distance, of the tubes used as the track rail for the gantry crane. Also, it happens that the possible level of the track rail for the gantry crane is very different on one side of the cross pieces and the other, at the site of a platform for example, and then it is necessary that the gantry crane beams are horizontal so that the support members leading to the lower level have a very long shaft which is especially troublesome in the case of underground tracks.

The goal of the present invention is to avoid these disadvantages and produce a support member of a beam, for a load transporting traveling crane that includes at least one pair of support members joined transversely by a beam, the support member being made of a structure that includes a vertical sleeve in which a shaft slides that allows height adjustment of the beam, characterized in that the lower part of the support member structure is divided into two parts starting from the base of the said sleeve, the lower end of each of the two parts having a wheel and being joined at the base of the sleeve by an oblique tube designed so that the geometry of the base of the support member allows the said beam to be secured to the said shaft at the lower part of the support member between the floor and the

base of the sleeve and in that the external surface of the said shaft is a cylinder with straight circular cross section. /2

Thus, according to the invention, the distance between the support members is not absolutely fixed; indeed, the circular shaft on which the beam is secured allows deformation of the traveling crane, whether it is made of four support members and of two beams or even two support members and a single beam. Also, the geometry of the base of the member allows one, when necessary, to support the beam at the upper part of the support member or at the lower part between the base of the sleeve and the floor.

Several advantages and characteristics of the invention will be apparent from the description of one example of implementation of the invention that is given subsequently with regard to the attached drawing in which:

Figure 1 shows a support member according to the invention.

Figures 2 and 3 show a simplified traveling crane with a single beam that includes support members according to the invention, in two different cases of implementation.

Figures 4 and 5 show from two different views, figure 5 being a view along V-V of figure 4, and a gantry crane according to the invention that includes two beams that support a lifting beam.

In reference to figure 1, the support member includes a tubular structure that includes a central part 1 made of a cylindrical tube used as a sleeve with a shaft 2 in which it slides freely. The lower part of the structure is divided into two parts that each includes a wheel 3. The two lower ends that have a wheel 3 are each joined to the sleeve 1 by means of oblique tubes 4 and 5. The tubes 4 and 5 are joined at the base of the sleeve that is itself located at a certain distance from the base of the wheels 3, thus allowing, as one can see in figure 3, support of a beam 6 in the lower part of the support member.

The assembly also includes a brake comprised of a shoe 7, a lever 8 articulated at 9 and a spring 10. A sleeve 11 to which beam 6 is secured is slipped on shaft 2. The assembly is held by two pins 12 and 13 that pass through the sleeve 11 and sleeve 1 in the case of figure 1 but which are placed below sleeve 11 and above sleeve 1 in figures 2 and 3, which allows the traveling crane to be deformed by rotation of the support member with respect to the beam and therefore to compensate for the variations of distance that might occur between the two tubes 14 and 15 placed on the floor as the track rail.

Figure 2 shows a traveling crane comprised of two support members and a beam 6. The beam 6 is located in the upper part of the support members.

/3

In figure 3 the beam 6 is supported on the right at the top of the support member and on the left in its lower part as the lower geometry of the support member allows. This possibility is beneficial in the case when one wants to position railroad cross pieces for example on the lower level 16 and when there is no room to position the left support on the same level, in the case when the cross pieces abut against or nearly against the vertical edge 17 of a platform 18 for example. In these figures 2 and 3 we have shown only one traveling crane that includes only one beam, but in general and in particular in the application of placement of railroad cross pieces, the traveling crane includes two beams as shown in figures 4 and 5; but this makes no change to the invention that consists of the support member structure.

In these figures the traveling crane includes four support members 19, 20, 21, and 22, the support 21 not visible in the figures, and two beams 23 and 24. A lifting beam 27 that includes some hooks 28 is suspended by chains 25 and 26 to these beams. One suspends railroad track cross pieces from these hooks 28 for example in order to position them on the floor.

The two support members 19 and 22 located on the same track rail 14 are connected by a fastening 29, and the same is true of the support members 20 and 21 located on the railroad track 15.

As one can see in figures 2, 3, and 4, the beams 6, 23, and 24 are telescoped and therefore one can adjust their length. /4

CLAIMS

Support member of a beam for a traveling crane that includes at least one pair of support members joined transversely by a beam, the support member being comprised of a structure that includes a vertical sleeve in which a shaft slides that allows height adjustment of the beam, characterized in that the lower part of the support member structure is divided into two parts starting from the base of the said sleeve, the lower end of each of the two parts bearing a wheel and being joined at the base of the sleeve by an oblique tube so that the geometry of the base of the support member allows the said beam to be secured to the said shaft in the lower part of the support member between the floor and the base of the sleeve, and in that the external surface of the said shaft is a straight circular cross section cylinder.

FIG.2

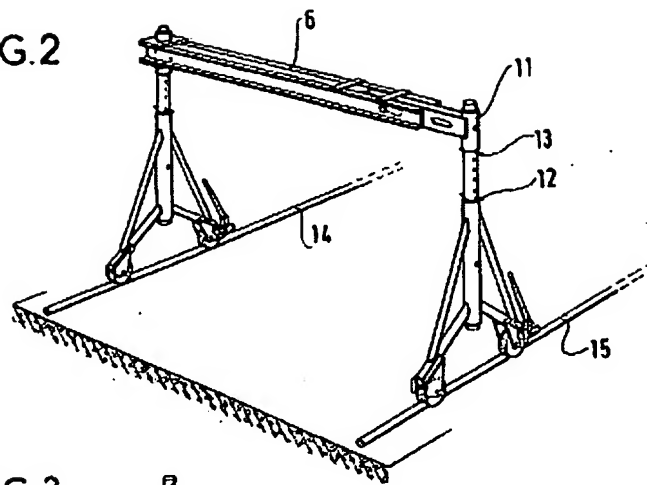
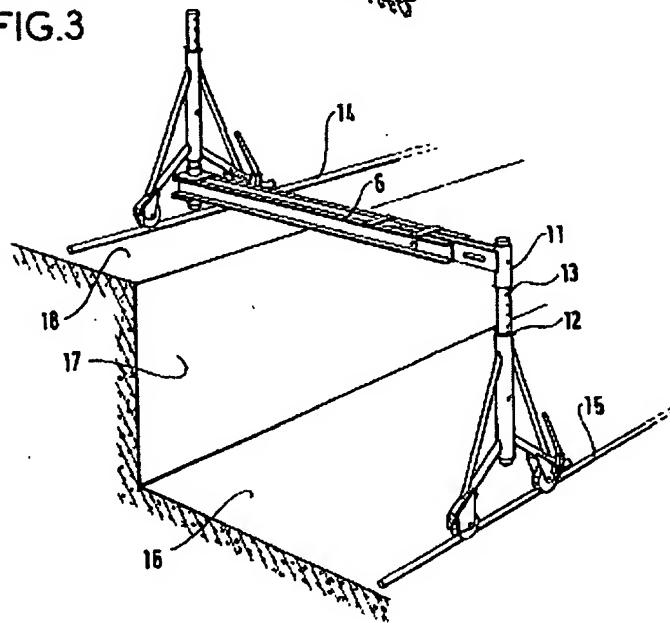


FIG.3



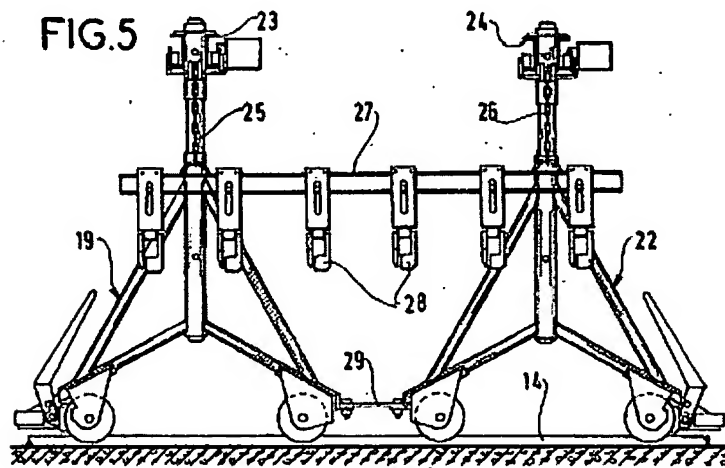
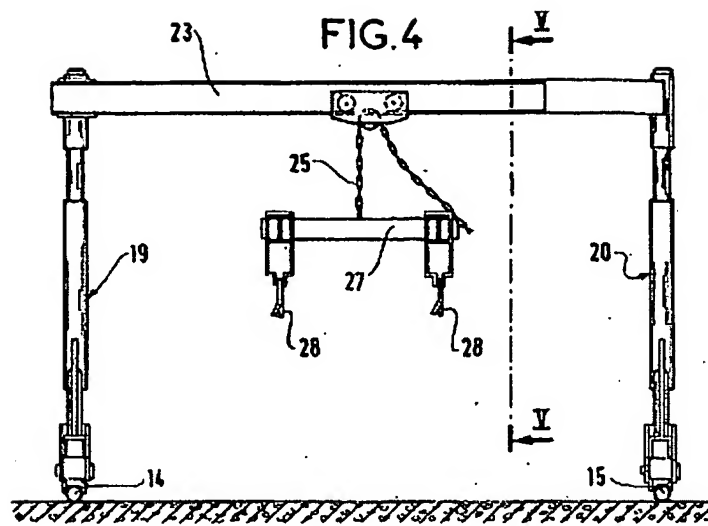


FIG.1

